CHANGING PATTERNS IN THE PREVALENCE OF MENTAL SUBNORMALITY IN NORTHERN IRELAND

by

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INTRODUCTION

DESPITE a strong recommendation by a World Health Organisation (1954) report that "research into, and surveys of, prevalence rates (of mental subnormality) should be a continuing feature of the mental health programmes of individual countries" (p 10), comparatively few reports have been published. Examples of European surveys are those by Akesson (1961) in a Southern Swedish population and by Amnell, Palo and Varilo (1964) in Finland. Examples of surveys in the United Kingdom are those by Scally and MacKay (1964a) in Northern Ireland, Kushlick (1965) in Wessex and Innes, Kidd and Ross (1968) in North-East Scotland. The present report is concerned with a re-assessment of the prevalence of mental subnormality in Northern Ireland. It is perhaps the first of its kind to be reported which allows for prevalence comparisons to be made over a period of time within the same region.

Other investigations have made inferences about changes in prevalence by studying sections of the general population. For example, Rayner (1964) concluded that the prevalence of mental deficiency in Sweden was declining since the number of military conscripts who underwent routine examination and were found to be mentally subnormal had shown a marked decline over the years. In another investigation he found (Rayner, 1962) that the incidence of juvenile amaurotic idiocy had also declined. In both cases he tentatively attributed the changes to the disruption of population isolates.

But the investigation reported here was organised on different lines. The background can be described briefly. Ascertained subnormals in Northern Ireland are referred to as "persons requiring special care" or "special care patients". Until recently they were informally graded as high (IQ 50+), medium (IQ 20–49) or low (IQ 0–19). The criteria in the Mental Health Acts (Northern Ireland, 1948, 1961) are essentially subnormality of intelligence from birth or from an early age and social inefficiency. For more detailed information see Scally and MacKay (1964b).

An overall index of the prevalence of subnormality for a given region can be very useful. It can also be misleading. It can be helpful to the body or bodies responsible for the care of the subnormal in their planning of future services and provisions. When used, however, for comparisons across regions or countries it can be misleading since the criteria of subnormality may, and usually do, vary from place to place. Rayner (1964) reported that the criterion in his survey was

an IQ of approximately 75 to 80. Social inefficiency was not specified. In Northern Ireland a number of high grade referrals are rejected as candidates for special care on the grounds that they are socially competent. Thus Rayner's survey would have certain kinds of subnormals who would not be included on the special care registers and comparisons based on overall prevalence rates would not only be futile but misleading.

There are, nevertheless, certain circumstances when the differences in criteria would not necessarily invalidate inter-regional comparisons. If, for example, one region takes IQ as the sole criterion and another (as in Northern Ireland) had a dual criterion, comparisons would be possible between medium and low grade cases since, at these levels, social inefficiency by ascertainment standards appears to be an invariable concomitant of low IQ. The high grade category is the problematic group. In their regional comparisons, Scally and MacKay (1964a) omitted patients in this category.

One of the main advantages of the present investigation is that comparisons of prevalence rates can be made for all three grades within the same region over a period of years since the criteria of subnormality have remained exactly the same. A second main advantage is that the observed rates are based on ascertained cases of all ages and grades. Inferences about population trends are not made on the basis of incidental samples.

Method

All the files of individual special care patients were examined. The files are kept at the headquarters of the Eastern area (Belfast and Muckamore Abbey Hospital), the Northern area (Londonderry) and the South Western area (Armagh). The information, comprising the sex, age, grade, place of care and the presence or absence of a diagnosis of mongolism, was put on punch cards for analysis.

Results

General

The general findings of the present survey are given in Table I together with the corresponding figures obtained in the earlier survey (Scally and MacKay, 1964a).

Table I

Total Special Care Populations, Rates per 1,000 *Population and Male/Female Ratios in the* 1964 *and* 1970 *Surveys, Northern Ireland*

Year	*General population*	*Total special care population*	*Rate per* 1,000 *population*	*Male/Female ratio*
1964	1,435,400	4,631	3.2	1.11: 1
1970	1,502,000	6,117	4.1	1.14: 1

Although the nett increase in the general population over the six years was 4.6 per cent, the number of special care patients increased by almost one third. The rate per 1,000 of the general population increased from 3.2 to 4.1. These results should *not* be taken to indicate a real increase in the prevalence of subnormality. The Special Care Service came into being in 1948. Harbison, MacKay and Weir (1967) have shown that low grade patients tend to be notified when very young because, in addition to being subnormal, they usually have very noticeable physical stigmata. Medium grade patients tend to be notified while of school age and high grade cases are notified relatively late in life. The apparent increase is, therefore, probably due to the fact that a comparatively new service is still trying to catch up with all extant cases. Most, if not all, low grade patients will have been ascertained but some medium grade and many high grade patients might not have been ascertained in 1964 when the service was only sixteen years old.

Although medium grade cases tend to be referred while of school age, there are some whom parents or guardians prefer not to have ascertained until they themselves are unable to cope. The same may apply to high grade cases. It may be a few years, therefore, before the notification and ascertainment rates settle to a level commensurate with that of a region where services for the subnormal have existed for a long time.

As might be expected from other surveys, males outnumbered females; the ratios for 1964 and 1970 are somewhat similar.

Grade

Table II shows the percentages of patients in the three grades for the two surveys. The very slight increase in actual numbers in the low grade category and their decrease as a percentage of the subnormal population lends indirect support to the view that their ascertainment was complete in 1964. If the argument, outlined

TABLE II

Percentages of Special Care Patients in the Three Grades in 1964 *and* 1970
(*Actual numbers are given in brackets*)

Year	*Percentages of patients*		
	High	*Medium*	*Low*
1964	29.2 (1,354)	59.5 (2,755)	11.3 (522)
1970	31.5 (1,928)	59.6 (3,647)	8.9 (542)

above, that differences in ages at notification between grades would affect observed trends in population analysis is tenable, then one might, in the present survey, expect a greater increase among high than among medium grade patients. In fact, high grade cases increased by 30 per cent and medium grade cases by 24.4 per cent.

The percentage of medium grade subnormals to the subnormal population as a whole remains almost the same in 1970 as it did in 1964. The percentage of high grade cases has increased slightly.

Type of care

Approximately one in three of the patients was under residential care. Table III shows the numbers under community and hospital care, by grade. Twenty-three per cent were in subnormality hospitals and thirteen per cent in mental hospitals

TABLE III

Distribution of patients by type of care and grade

The numbers are given followed by the percentage in italics and in brackets

Type of care	*All patients*	*Grade*		
		High	*Medium*	*Low*
Hospitals:				
Subnormality	1,429 (*23.4*)	359 (*18.6*)	842 (*23.1*)	228 (*42.1*)
Mental and Others	774 (*12.6*)	256 (*13.3*)	444 (*12.2*)	74 (*13.6*)
Community	3,914 (*64.0*)	1,313 (*68.1*)	2,361 (*64.7*)	240 (*44.3*)
	6,117	1,928	3,647	542

and other residential units. Those in mental hospitals are, on the whole elderly patients who needed residential care before 1948 and for whom special units were not available. The probability of their release from these institutions is very low.

Not surprisingly, over half the low grade cases are in hospitals. Most of them require much nursing care and often pose insuperable problems to their parents who, sooner or later, request their admission to hospital. By contrast, only 32 per cent of the high grade patients are under residential care.

Grade and Age

The prevalence of high grade patients increased from 0.9 in 1964 to 1.3 per 1,000 of the general population in 1970. Table IV shows the numbers and rates, by age, for the two surveys. Very young high grade patients (0–9 years) are few and constitute only about 2 per cent of all cases in this category. The highest rate in 1964 was in the 15–19 age groups (2.2); in 1970 it was in the 20–29 age groups. In the age groups of 20 years and over, the rates per 1,000 of the population for 1970 consistently exceed those of 1964. The largest discrepancy was in the 20–29 age group. Many of these patients are notified for the first time at about this age and it is usually some sort of anti-social conduct on their part that draws attention

TABLE IV

Prevalence of High Grade Special Care Patients per 1,000 in each age group population in Northern Ireland in the 1964 and 1970 surveys, by age groups

High grade age groups	1964 *survey (Scally and MacKay)*		1970 *survey (MacKay)*	
	Number	*Rate per 1,000 population*	*Number*	*Rate per 1,000 population*
0–4	4	0.0	6	0.0
5–9	18	0.1	38	0.3
10–14	91	0.7	63	0.5
15–19	281	2.2	280	2.2
20–29	383	2.1	658	3.3
30–39	219	1.3	309	1.8
40–49	157	0.9	250	1.4
50–59	132	0.8	159	1.0
60+	69	0.3	165	0.7
Total	1,354	0.9	1,928	1.3

to them. Many more manage to exist quite well in the community without attracting attention.

Table V shows the corresponding numbers and rates for medium grade patients. Children (i.e. 14 years and under) comprised 31.6 per cent of all medium grade cases in 1964 and 28.8 per cent in 1970. The highest rate in the present survey occurred in the 15–19 age group. The most interesting point in this table is that, for every single age group without exception, the 1970 rates exceed those of 1964. A few of the discrepancies are very small, particularly in the 0–4 and 60+ groups. The largest increase occurred in the 30–39 age group. The overall prevalence has increased from 1.9 in 1964 to 2.4 per 1,000 of the population in 1970. Table VI gives the details. At no age level does the rate equal or exceed 1 per 1,000. Differences between rates for the two surveys are very small at all ages. Surprisingly, some patients in this category survive into middle age and older. Between the ages of 5 and 29 the rates are consistent for both surveys. In the present investigations, they are identical between the ages of 5 and 19; in the next decade the rate varies by only 0.1 per 1,000.

TABLE V

Prevalence of Medium Grade Special Care Patients per 1,000 in each age group population in Northern Ireland in the 1964 and 1970 surveys, by age groups

Medium grade age groups	1964 *survey (Scally and MacKay)*		1970 *survey (MacKay)*	
	Number	*Rate per 1,000 population*	*Number*	*Rate per 1,000 population*
0–4	109	0.7	123	0.8
5–9	367	2.7	459	3.0
10–14	394	3.0	470	3.5
15–19	414	3.3	519	4.1
20–29	589	3.3	787	4.0
30–39	306	1.8	501	3.0
40–49	259	1.5	343	2.0
50–59	190	1.2	230	1.5
60+	127	0.6	215	0.9
Total	2,755	1.9	3,647	2.4

TABLE VI

Prevalence of Low Grade Special Care Patients per 1,000 in each age group population in Northern Ireland in the 1964 and 1970 surveys, by age groups

Low grade age groups	1964 *survey (Scally and MacKay)*		1970 *survey (MacKay)*	
	Number	*Rate per 1,000 population*	*Number*	*Rate per 1,000 population*
0–4	57	0.4	39	0.2
5–9	97	0.7	85	0.6
10–14	82	0.6	87	0.6
15–19	92	0.7	75	0.6
20–29	96	0.5	142	0.7
30–39	40	0.2	48	0.3
40–49	32	0.2	36	0.2
50–59	19	0.1	20	0.1
60+	7	0.0	10	0.0
Total	522	0.4	542	0.4

Discussion

The present investigation of the prevalence of subnormality in Northern Ireland allowed for comparisons to be made for all three grades of severity of retardation, by age groups, with the findings of an earlier survey (Scally and MacKay, 1964a) in the same region. The main findings were that

(i) the overall rate increased from 3.2 in 1964 to 4.1 per 1,000 in 1970;
(ii) the greatest increase was amongst high grade patients but the rate for low grade cases remained the same;
(iii) there were more males than females;
(iv) both surveys showed that about one third of all the patients were hospitalised.

This discussion will take as its starting point the apparent increase in the overall rate of subnormality. As was stated earlier, the apparent increase should not be interpreted as indicating a real increase in the prevalence. It ought to be interpreted as showing that, because of its relatively recent introduction, the Special Care Service has not yet achieved full ascertainment of all subnormals except, perhaps, in the case of low grade patients. A Report on the Development of the Special Care Service in Northern Ireland (1966) predicted that complete ascertainment would be achieved in 1973. Despite the caution that should be exercised in interpreting the present figures, they may give rise to some alarm.

Scally and MacKay (1964a) compared the prevalence of medium and low grade patients with the rates estimated by Lewis (1929) for England and Wales and with the rates obtained by Goodman and Tizard (1962) of imbecility and idiocy among children in London and Middlesex. With one exception (10–14 age range), the prevalence rates for Northern Ireland were higher than those found by Lewis in England and the rates of medium and low grade children were higher in all age groups than those estimated by Goodman and Tizard in their survey. If full ascertainment is not, in 1974, yet complete in Northern Ireland for medium grade patients, then one must conclude that the 1964 rates were conservative. It would appear, therefore, that the real prevalence of subnormality in this region may be higher than in other parts of the United Kingdom. The comparisons made in the earlier survey between regions might be criticised for two reasons. First, Lewis (1929) carried out his survey over 40 years ago and there might be grounds for believing it to be out of date. Nevertheless it is still quoted as being one of the best and one of the most reliable of its kind. Second, Scally and MacKay did not attempt to determine whether the regions involved were comparable on factors such as demographic characteristics and these should be taken into account. They omitted to do this simply because of the paucity of prevalence data. Comparisons had to be made where possible.

Fortunately, a recent survey on subnormality in North-East Scotland (Kidd, Innes and Ross, 1967) provides a much better basis for making inter-regional comparisons and these form the subject matter of a further report.

The second feature meriting discussion is the distribution of patients in the grades. It was suggested by Lewis (1929) that, in every hundred defectives, there are 75 feeble-minded cases, 20 imbeciles and 5 idiots. These terms correspond

broadly to high, medium and low grade categories respectively. In the present survey the ratio of low to medium grade cases is approximately 1 to 6. But the ratio of medium to high is about 2: 1, a widely discrepant estimate. These figures would indicate, very roughly, that only about 24 per cent of high grade subnormals in the general population are on the special care registers. The others are presumably managing to exist in the community without too much trouble.

The third interesting aspect of the present survey is the distribution of patients by age, within grades. It has been found, in common with other surveys, that the life expectancies of patients in Northern Ireland differ with respect to grade (McCurley, MacKay and Scally, 1971). Not surprisingly, the distributions in the present survey are skewed. The percentage of high, medium and low grade patients under the age of 14 are 5.5, 28.8 and 38.9 respectively. These differences, using the actual numbers in the analysis, are highly significant ($p<0.001$). The increasing life expectancy of all grades of subnormals is going to be an important factor in prevalence surveys and, at a very practical level, it will have an important bearing on the planning of services.

Finally, there is the recurrent observation that, in surveys like these, males outnumber females. Different explanations of this sex difference have been advanced and have been discussed by Harbison et al (1967) and other investigators. Beginning with Ellis (1904), a number of writers have suggested that, although the average ability of men and women may be equal, the range of intelligence is wider among men. According to this argument more geniuses and more mental defectives would be found among men than among women. Survey data on institutional populations were presented as evidence of the greater number of male defectives and statistics on eminence were cited as proof of the greater frequency of superior men. Roberts, Norman and Griffiths (1938) found that boys were 13 per cent more variable than girls in intelligence test. This notion of greater male variability was regarded by some as a fundamental bilogical law.

Another explanation put forward was that the uncompetitive nature of many occupations open to women meant that the detection of feeble-mindedness, as well as the necessity for admission to hospital or some other kind of care, would be less likely among women than among men. Harbison (1966) found that female patients admitted to a psychiatric unit had significantly lower IQ's than males and propounded a rather similar explanation for this difference: the males, being the wage earners, are under greater external stress than women. If the males show any sign of a breakdown, or decreased mental efficiency, immediate steps are usually taken by themselves, their relatives or their employers. With females, on the other hand, any lessening of efficiency might tend to go unnoticed or, if noticed, be tolerated much longer so that those who are eventually admitted to a psychiatric unit are relatively worse than males and this is manifested in their poorer performance on a wide range of psychological tests.

A third possible explanation has been put forward by Heber (1962). He suggested that social and cultural differences exist in classifying patients as needing institutionalization or ascertainment. There are, he suggests, three aspects which assume differing importance as qualifying conditions of mental subnormality for

different age groups. Delay in maturation is the most frequent cause of referral to clinics for pre-school children; defects in learning ability constitute the most frequent cause of referral during the school period and social inefficiency or social maladjustment the most frequent reason for referral in subsequent years. One might be able to predict sex differences in terms of numbers at referral at these three stages. When the social aspect of classification is considered, society may be *less* tolerant of females than of males, depending on factors such as type of abnormal behaviour, age, etc. The community tolerance thresholds of misdemeanours by adult women may be lower than it is for men, perhaps because most misdemeanours committed by adult mildly retarded females involve sexual activities. These arguments would suggest that as far as high grade subnormality is concerned, a "double standard" may exist in the criterion for referral of boys and girls, men and women and that "society's tolerance levels for undesirable acts may vary differently with age for males and females" (Windle, 1962). Clearly, this common survey finding of the excess numbers of males needs further investigation.

An identical survey is planned for Northern Ireland in 1974 and a further investigation for 1975. If ascertainment is complete for the region by that time, it will be possible to state with greater certainty what the differences between regional prevalence rates are. At present, it would appear that the rates are higher than might be expected from other surveys.

Summary

A re-assessment of the prevalence of mental subnormality in Northern Ireland showed that, in a general population of 1,502,000, the known case load of ascertained subnormals (6,117) represented a prevalence rate of 4.1 per 1,000. In 1964 the rate was estimated to be 3.2. The apparent increase is probably due to the fact that, because of the relatively recent introduction of a service to cope with the subnormal, ascertainment of subnormals is, with the exception of low grade cases, not yet complete. Although there appear to be no grounds for concluding that the difference over time reflects a real increase in the prevalence of mental subnormality, the present necessarily conservative figures indicate relatively high rates amongst medium and low grade cases. Other findings were that males exceeded females and the fact that approximately one third of the ascertained subnormals were hospitalized. Further studies are planned.

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